

62nd Annual Report National Cooperative Dry Bean Nurseries

2011

**Compiled by
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USDA-ARS**

**Cooperative Investigation among California, Colorado, Idaho,
Maryland, Michigan, Montana, Nebraska, New York, North
Dakota, Washington, and Wyoming -State Experiment Stations and
Agricultural Research Centers- as part of the
Regional W2150 Multi-State Project**

and

University of Guelph, Canada

and

Agriculture Research Service – USDA

Call for 2012 Cooperative Dry Bean Nursery

Seed Submissions

It is time to request seed submission for 2012 Cooperative Dry Bean Nurseries. I would like to receive **the list of seed submission** no later than **April 1, 2012** and **the seed** must be here no later than **April 15, 2012**. All entries will be planted in replicated test plots across several locations in the United State and Canada. Data will be taken for seed yield, 100-seed weight and several agronomic and marketing characteristics. They will also be included in several disease nurseries including bean rust and Michigan will conduct canning tests.

The seed requirements for each of the three groups are as follows:

1. Small-seeded (Black, Navy, Others): **15 lbs/line**.
2. Medium-seeded (Great Northern, Pink, Pinto, Small Red, Others): **25 lbs/line**.
3. Large-seeded (Cranberry, Kidney, Others): **35 lbs/line**.

As in the past, all lines must be:

- Western grown (West of the Rocky Mountain)
- Pathogen free
- If susceptible to BCMV, an ELISA test will be required.
- Acceptable commercial quality (no broken, decayed, or off color seed)
- Seed should be untreated

Fees: This fee structure was decided by the W-1150 members at The Annual meeting in Mayaguez, Puerto Rico in 2003

Public institutions: \$150/ line submitted

Private institutions: \$300/line submitted

NURSERY OPERATIONS

Public institutions that request a nursery will be charged US \$150 to defray seed handling expenses including treating, bagging, boxing and shipping costs. Please let me know if your institution is going to submit the seeds and participate in the field trial for 2012 CDBN.

Should you have any questions or concerns about the submission or participant fees please contact me or if you know anyone else who might like to submit seed or plant the nursery please let me know.

Contact and Shipping Information:

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Table 1. List of Contributors and Cooperators - 2011

Name	Location	Seed Submit	Planting seed	Locations no.
Shree Singh	Kimberly, ID	yes	yes	1
Mike Moore	Powell, WY		yes	2
Steve Temple	Davis, CA	yes	yes	3
Phil Miklas	Othello, WA	yes	yes	4
Mark Brick, Barry Ogg	Ft. Collins, CO	yes	yes	5
Juan M. Osorno	Fargo, ND	yes	yes	6
Carlos Urrea, Jim Schild	Scottsbluff, NE	yes	yes	7
Jim Kelly, Evan Wright	Frankenmuth, MI	yes	yes	8
Don Halseth Eric Sandsted	Freeville, NY		yes	9
Joyce Eckhoff	Sidney, MT		yes	10
Peter Pauls, Tom Smith	Elora R.S, Ont	yes	yes	11
Talo Pastor- Corrales	Beltsville, MD		yes (rust test)	
Bill Dean	Kimberly, ID	yes	yes (1 rep)	
James Beaver	Isabela, PR		yes	

Table 2. Data contributors for 2011 Cooperative Dry Bean Nursery

Loc	Last	First	Affiliation	EMAIL	Phone
CA	Steve	Temple	University of CA – Davis	srtemple@ucdavis.edu	530-752-8216
CO	Mark	Brick	Colorado State University	Mark.Brick@colostate.edu	970-491-6551
	Barry	Ogg	Colorado State University	Barry.Ogg@Colostate.edu	
ID	Shree	Singh	University of Idaho	singh@kimberly.uidaho.edu	208-423-6559
MD	Marcial	Pastor- Corrales	USDA/ARS	pastorm@ba.ars.usda.gov	301-504-6600
MI	Jim	Kelly	Michigan State University	kellyj@msu.edu	517-355-0271 Ext. 1181
MT	Joyce	Eckhoff	MSU Eastern Ag Research Center	jeckhoff@sidney.ars.usda.gov	406-433-2208
ND	Juan	Osorno	North Dakota State University	juan.osorno@ndsu.edu	701-231-8145
NE	Jim	Schild	University of Nebraska	jschild@unl.edu	308-632-1480
NY	Donald	Halseth	Cornell University	deh3@cornell.edu	607-255-5460
	Eric	Sandsted	Cornell University	ers23@cornell.edu	
ON	Peter	Pauls	University of Guelph	ppauls@uoguelph.ca	519-824-4120 Ext 52460
	Tom	Smith	University of Guelph	thsmith@uoguelph.ca	519-824-4120 Ext 8339
	Ali	Navabi	AFC	alireza.navabi@agr.gc.ca	519-824-4120 ext. 56829
WA	Phil	Miklas	USDA-ARS	phil.miklas@ars.usda.gov	509-786-9258
WY	Mike	Moore	University of Wyoming	mdmoore@uwyo.edu	307-754-9815

Table 3. List of 2011 Cooperative Dry Bean Nurseries Entries

	Line	Previous no.	Breeder	Class
1	Othello		Check	pinto
2	Long's Peak	CO55646	Brick-CSU	pinto
3	IP08-2		Singh-UI	pinto
4	IP09-3		Singh-UI	pinto
5	PT8-6		ARS-Miklas	pinto
6	PT8-15		ARS-Miklas	pinto
7	PT9-6		ARS-Miklas	pinto
8	Lariat		Osorno-NDSU	pinto
9	ND307		Osorno-NDSU	pinto
10	Stampede		Osorno-NDSU	pinto
11	ND020351-R		Osorno-NDSU	pinto
12	Max		ISB-Dean	pinto
13	Sequoia		ISB-Dean	pinto
14	Odyssey		ISB-Dean	pinto
15	Apache		ISB-Dean	pinto
16	Coyne		Urrea-NE	GN
17	Avalanche		Osorno-NDSU	navy
18	Rexeter	OAC 07-2	T.Smith - Guelph	navy
19	T-39		check	black
20	UCD 0801		Temple-UCD	cran
21	Bellagio		Kelly-MSU	vine cran
22	OAC Inferno	OAC 07-L1	T.Smith - Guelph	LRK
23	Majesty		T.Smith - Guelph	DRK
24	CELRK		check	LRK

The 2011 CDBN

The 2011 CDBN comprised 24 test entries and three checks (numbered from 1 to 24)

Agronomic nurseries

There were approximately 1600 seeds supplied to each location sufficient to plant four 4-row replications, 20 to 25 feet long, for each entry. Seed was treated by Syngenta (Sam Thornton & Doug Deschamp) with Cruiser, Maxim XL + Apron XL (MSDS are included with bean shipment) unless nursery operator requested otherwise. Note Idaho Seed Bean received 100 seeds of each entry for observation and UPR (J. Beaver) received 150 seeds for winter nursery observation.

Disease Nurseries

There were 400 seeds (untreated) supplied to Beltsville, MD, for rust screening.

DATA RECORDING AND SCALES

The following were commonly recorded data by the CDBN collaborators. For ease and uniformity of reporting we shall describe and abbreviate each trait:

1. **Early Vigor (EV)**: Scored on a 1 to 9 scale, where 1= excellent and 9= very poor, within the first 3 weeks after emergence.
2. **Days to Flower (DF)**: Actual number of days from planting to when approximately 50% plants in a plot have at least one opened flower.
3. **Days to Maturity (DM)**: Actual number of days from planting to when approximately 50% of plants in a plot have at least one dry pod.
4. **Plant Height (PH)**: Record in cm from the base of the plant (soil surface) to the top node bearing at least one dry pod with seed.
5. **Growth Habit (GH)**: Record during flowering and verified when crop is senescent as type I=determinate erect or upright, II= indeterminate erect, and III= indeterminate prostrate.
6. **Lodging (LG)**: Scored at harvest on a 1 to 9 scale, where 1= 100% plants standing erect, and 9= 100% plants lay flat on the ground.
7. **Pod Clearance (PC)**: Recorded at harvest as percent of pods on plants not touching the ground or in contact with the soil surface.
8. **Biomass Yield (BY)**: Total plant dry weight recorded at 12% moisture and rounded up to the nearest whole number (lb/a).
9. **Seed Yield (SY)**: Recorded in lb/a at 12 % moisture and rounded up to the nearest whole number.
10. **Harvest Index (HI)**: The ratio of SY/BY expressed in % BY at 12% moisture.
11. **Weight of 100 seeds (SW)**: Weight of 100 randomly taken undamaged seed in grams at 12 % moisture.
12. **Appearance Desirability (SD)**: An aggregate value for seed size, shape, color and brilliance for the respective market class recorded by various scales (see footnotes).

For other traits and scoring methods, a footnote is provided with associated details.

Table 4. Summary agronomic and rust reaction data for the 2011 CDBN.

Line	Class	Yield	Seed weight g 100 sd	Harvest maturity days	Rust CO 1 to 6	Rust MD 1 to 9
		lb/A				
PT9-6	pinto	2971	37.6	97	1	1.0
PT8-6	pinto	2914	40.2	95	4,5,6	7.5
ND307	pinto	2838	40.5	97	2	3.3
Lariat	pinto	2818	41.7	99	1	1.5
ND020351-R	pinto	2784	38.9	97	1	1.5
Stampede	pinto	2774	39.4	96	1	2.5
Long's Peak	pinto	2695	38.3	97	3	1.0
PT8-15	pinto	2577	45.4	91	1	1.0
IP09-3	pinto	2564	41.1	97	Seg	1.0
Odyssey	pinto	2463	39.0	90	3,4,5	7.8
Max	pinto	2448	42.2	88	3,4,5	9.0
Othello	pinto	2361	39.1	87	4,5,6	9.0
Coyne	g. northern	2340	38.4	92	1	2.0
Sequoia	pinto	2332	36.2	94	1	1.5
Apache	pinto	2305	39.1	90	3	1.0
IP08-2	pinto	2077	32.7	98	4,5,6	8.5
Avalanche	Navy	2504	20.1	100	3	5.0
T-39	Black	2377	20.7	100	1	1.0
Rexeter	navy	2223	19.5	107	1	5.5
OAC Inferno	LRK	2514	55.7	102	1	3.5
Majesty	DRK	2117	63.3	96	3	4.3
CELRK	LRK	1710	54.7	90	3	7.3
UCD 0801	cran	2129	46.2	105	1	6.0
Bellagio	v. cran	1689	55.2	99	3,4	3.5
Mean		2435	40.4	96	2	4

Table 5. 2011 Summary yield (lbs/A) across locations.

Line	Class	CA	CO	ID	MI	MT	ND	NE	NY	ON	WA	WY	Mean
PT9-6	pinto	2684	3483	2751	2170	4347	2340	3818	2118	1621	4153	3193	2971
PT8-6	pinto	2249	2663	2342	2390	4403	2480	4216	2093	1228	4818	3167	2914
ND307	pinto	2389	3394	1948	2380	3843	2400	3386	2299	1236	4433	3506	2838
Lariat	pinto	2140	3154	2230	2190	3810	2220	4110	2280	2076	4339	2447	2818
ND020351-R	pinto	1697	3729	2314	1920	3943	1690	3583	1864	1715	4883	3286	2784
Stampede	pinto	1758	3926	2132	1790	3780	2230	3835	2024	1688	4424	2922	2774
Long's Peak	pinto	1931	3283	1875	2250	3517	2110	3460	1712	1357	4664	3484	2695
PT8-15	pinto	2499	2603	1874	2240	3673	2480	3902	2020	707	4172	2182	2577
IP09-3	pinto	2186	2815	2053	1870	3613	1580	3720	2055	1023	4801	2493	2564
Odyssey	pinto	2192	2593	1780	1830	3840	1910	3470	2085	907	3917	2563	2463
Max	pinto	2199	2265	2136	1410	4250	2000	3288	1770	658	3730	3223	2448
Othello	pinto	2210	2334	2023	2220	3783	1880	3392	2029	876	2833	2388	2361
Coyne	GN	1144	3278	1578	1610	3707	1980	3147	1978	1235	3453	2625	2340
Sequoia	pinto	1598	2499	1637	2220	3637	2140	2799	1631	1454	3640	2398	2332
Apache	pinto	1640	2291	1491	2030	3877	2100	3156	1730	982	3928	2127	2305
IP08-2	pinto	2420	1665	1754	1540	3510	1920	1894	1807	725	2664	2947	2077
Avalanche	navy	1767	2926	1746	2350	3540	-	2653	1958	895	4240	2961	2504
T-39	black	1490	2183	1727	2410	3350	2460	3158	2227	1113	3758	2266	2377
Rexeter	navy	1391	1913	1440	2530	2787	-	2812	2225	1139	3312	2679	2223
OAC Inferno	LRK	2100	3240	1855	3330	3363	1820	2909	2007	1873	2448	2709	2514
Majesty	DRK	844	2098	1278	3230	3670	1180	2754	1816	1301	2359	2753	2117
CELRK	LRK	1423	1098	933	3010	2573	910	1950	1620	664	2169	2465	1710
UCD 0801	cran	1390	2989	1939	1830	2953	850	2510	2002	1477	3057	2417	2129
Bellagio	v.cran	1332	1872	1293	1020	2500	910	2428	1672	968	2351	2229	1689
Mean		1861	2679	1839	2157	3595	1890	3181	1959	1205	3689	2726	2435
LSD (0.05)		289	661	135	400	580	530	489	292	262	614	783	
CV (%)		11	18	18	13	10	26	9	9	18	10	20	

This figure shows adaptation and stability of the lines for yield across test locations based on geometric means (adaptation) and coefficient of variation for Z (stability). The Z statistic from Airton et al. (BIC 48:182-183, 2005) measures adaptation and is correlated with geometric mean (Rayapati and Despain, BIC 49:249-250, 2006). It is apparent from the chart that OAC Inferno has wide adaptation and exceptional stability for a kidney bean.

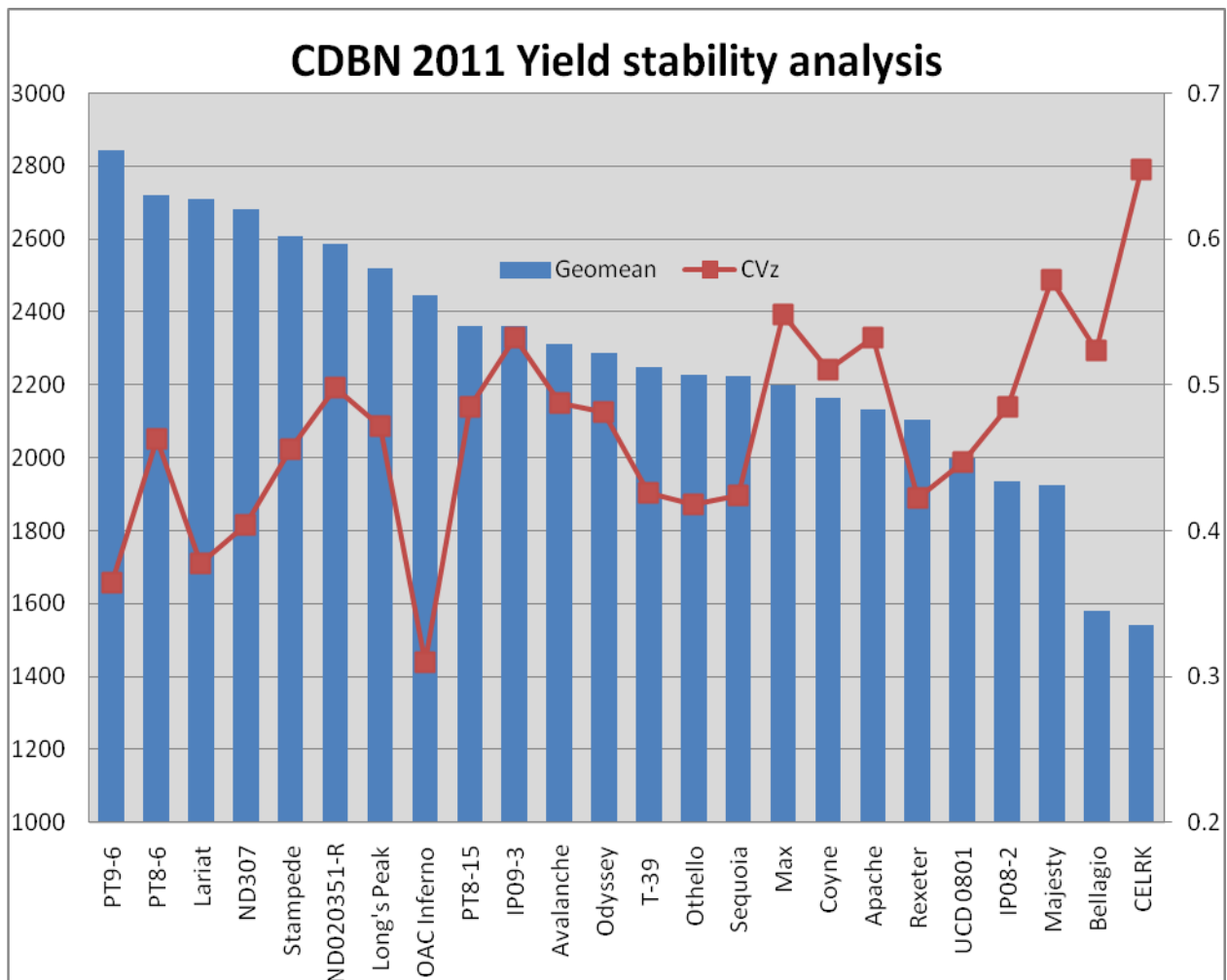


Table 6. 2011 Summary seed weight (g 100 seeds⁻¹) averaged across locations.

Line	CO	ID	MI	MT	ND	NE	NY	ON	WA	WY	Mean
PT9-6	40.1	33.0	47.7	39.0	36.1	33.9	34.6	37.0	39.5	34.8	37.6
PT8-6	38.6	39.0	40.3	42.7	37.5	38.6	43.1	39.4	40.9	41.6	40.2
ND307	43.4	37.0	41.6	42.4	38.1	36.6	43.3	38.0	45.1	39.9	40.5
Lariat	43.4	39.0	47.0	42.2	41.8	40.6	38.9	38.8	42.5	42.6	41.7
ND020351-R	42.1	34.0	46.1	39.3	37.2	35.3	35.4	41.8	41.3	36.5	38.9
Stampede	42.4	35.0	46.2	39.5	36.8	36.2	33.9	43.6	41.9	39.0	39.4
Long's Peak	40.2	38.0	36.8	39.3	35.3	37.4	36.6	38.0	40.7	40.6	38.3
PT8-15	48.1	44.0	48.2	46.8	42.9	43.5	45.2	41.7	47.8	45.6	45.4
IP09-3	43.4	42.0	43.4	40.6	39.5	41.4	41.3	40.8	45.6	32.8	41.1
Odyssey	36.7	37.0	39.6	37.7	37.5	36.5	43.8	41.3	40.7	39.7	39.0
Max	38.3	41.0	41.5	46.4	40.1	40.6	42.9	43.1	45.3	42.8	42.2
Othello	37.2	39.0	41.0	40.6	36.9	36.8	41.0	38.6	40.9	38.9	39.1
Coyne	39.7	37.0	38.4	40.9	35.6	37.5	37.3	39.4	38.0	39.7	38.4
Sequoia	35.0	36.0	37.2	39.9	32.4	32.9	35.5	39.9	38.3	34.8	36.2
Apache	36.1	36.0	40.3	40.4	37.3	36.4	40.6	42.0	44.0	37.5	39.1
IP08-2	28.7	34.0	35.4	33.8	28.2	25.9	32.7	32.9	37.3	38.2	32.7
Avalanche	22.2	19.0	22.4	19.6	-	18.9	19.1	19.4	20.6	19.8	20.1
T-39	19.4	18.0	26.3	19.3	19.6	18.9	21.4	24.0	21.0	18.7	20.7
Rexeter	19.3	18.0	24.9	17.1	-	16.8	20.9	19.5	20.7	18.7	19.5
OAC Inferno	53.5	51.0	64.1	52.1	43.0	50.4	61.4	71.2	52.9	57.6	55.7
Majesty	59.4	56.0	76.9	71.6	46.9	58.1	72.1	72.5	54.7	64.9	63.3
CELRK	53.7	52.0	58.3	62.5	38.2	50.3	63.6	55.6	55.8	56.8	54.7
UCD 0801	43.8	49.0	35.3	47.2	35.6	38.6	55.3	57.9	47.8	51.8	46.2
Bellagio	53.9	53.0	50.6	61.7	49.1	55.2	59.9	66.5	50.3	51.9	55.2
Mean	39.9	38.2	42.9	41.8	37.5	37.4	41.7	42.6	41.4	40.2	40.4
LSD (0.05)	3.1		4.0		4.8	2.2	2.3		2.8	2.4	
CV (%)	5.8		5.9		9.2	3.5	4		4.1	6.0	

Table 7. 2011 Summary harvest maturity (days) and days to flower across locations.

Line	CO	ID	MI	ND	NE	NY	ON	WA	WY	Mean	ND	NY	WY	MI	MT	ON	NE	Mean
PT9-6	95	97	100	97	92	90	101	104	95	97	47	40	56	42	63	44	48	48
PT8-6	95	96	104	102	91	86	89	100	90	95	47	34	54	40	62	39	46	46
ND307	100	97	101	98	98	91	91	104	96	97	46	37	56	40	62	41	48	47
Lariat	100	100	103	98	97	94	102	101	94	99	47	40	56	43	61	44	48	48
ND020351-R	95	99	103	98	98	90	94	101	92	97	46	41	56	40	62	41	47	47
Stampede	95	100	103	95	95	88	96	100	96	96	45	40	58	40	62	40	48	48
Long's Peak	95	97	100	102	97	90	100	98	96	97	50	43	59	40	62	41	48	49
PT8-15	95	91	96	98	89	82	94	92	83	91	46	34	54	40	61	41	45	46
IP09-3	100	98	104	99	95	89	93	101	91	97	48	37	56	40	62	40	48	47
Odyssey	90	87	96	98	90	87	87	90	85	90	46	34	53	41	62	39	45	46
Max	90	84	95	95	90	79	86	89	80	88	45	34	54	40	61	39	45	45
Othello	90	83	96	95	88	81	85	88	78	87	44	34	53	37	61	39	44	45
Coyne	90	92	102	98	94	89	89	92	86	92	48	36	56	39	61	40	46	47
Sequoia	95	91	99	100	101	83	93	94	89	94	54	36	54	39	61	40	49	48
Apache	100	87	97	98	92	81	86	89	83	90	44	34	54	39	62	40	46	46
IP08-2	97	90	108	103	107	101	97	100	83	98	52	44	54	42	63	41	53	50
Avalanche	95	99	103	-	106	93	100	108	94	100	-	42	57	43	61	43	52	50
T-39	95	99	103	95	103	90	106	109	96	100	49	42	57	45	62	46	56	51
Rexeter	105	100	106	-	111	106	114	114	99	107	-	40	57	42	65	44	51	50
OAC Inferno	100	98	108	95	108	107	108	95	98	102		42	35	55	37	62	39	46
Majesty	100	98	101	94	95	91	100	92	93	96	47	38	55	39	62	40	45	47
CELRK	90	97	100	86	88	84	91	88	86	90	41	35	53	35	60	37	46	44
UCD 0801	100	102	110	106	111	107	111	100	98	105	44	44	55	39	63	41	51	48
Bellagio	95	97	102	102	104	90	109	98	94	99	45	40	54	40	61	40	45	47
Mean	96	95	102	98	97	90	97	98	91	96	47	38	54	41	61	42	47	47
LSD 0.05		1	3		4	5	4	5	6	4	4	2	2	3	2	2	3	
CV %		2	1.2		2.3	3.2	3	4.6	2	3	5.7	3	2	3.1	4	3	4.3	

Table 8. Disease reaction data for 2011.

	Rust	Rust	CBB	Ozone
	CO	MD	NE	ON
Line	1 to 6	1 to 9	1 to 9	1-5
PT9-6	1	1.0	8	2.5
PT8-6	4,5,6	7.5	8	1.3
ND307	2	3.3	7	1.0
Lariat	1	1.5	7	2.0
ND020351-R	1	1.5	7	2.0
Stampede	1	2.5	7	1.5
Long's Peak	3	1.0	7	1.0
PT8-15	1	1.0	7	1.8
IP09-3	Seg	1.0	7	2.5
Odyssey	3,4,5	7.8	7	1.5
Max	3,4,5	9.0	8	1.3
Othello	4,5,6	9.0	9	1.3
Coyne	1	2.0	6	1.3
Sequoia	1	1.5	8	2.0
Apache	3	1.0	7	1.0
IP08-2	4,5,6	8.5	5	1.5
Avalanche	3	5.0	7	1.5
T-39	1	1.0	6	2.0
Rexeter	1	5.5	2	3.3
OAC Inferno	1	3.5	5	1.3
Majesty	3	4.3	7	1.0
CELRK	3	7.3	7	1.0
UCD 0801	1	6.0	5	1.0
Bellagio	3,4	3.5	6	1.0
Mean	2	4	7	1.52
LSD 0.05				0.64
CV %				34.8

Rust for CO is based on 1 = no symptom, 2 – necrotic fleck, 3 is small pustule and 4, 5, 6, are larger pustules. For MD rust and NE CBB, scale is based on disease severity and incidence with 1 = best and 9 = worst. For Ozone 1 is best and 5 is worst. Rust checks (MD) UI-114 = 9, Aurora = 7, and Buster = 2. CBB checks were Orion = 8, ABC Weihing = 3, and USPT-CBB-6 = 2.

Table 9. Miscellaneous trait data for 2011 CDBN.

	Emer- gence	stand	Canopy height			Lodging			Bio- mass	Harvest index	Desir- ability	Harvest- ability
Line	WA	MT	ND	MI	ON	MI	ON	WA	NY	NY	MI	ON
	1 to 9	%	cm			1 to 5	1 to 5	1 to 9	lb/A		1 to 7	1 to 5
PT9-6	1.3	90	49	48	45	2.0	3.0	6.2	3560	59	4.0	2.9
PT8-6	2.0	88	53	52	44	2.0	2.3	4.8	3489	60	5.0	3.0
ND307	1.3	92	51	53	45	2.5	2.3	4.8	3879	59	4.5	2.8
Lariat	2.0	90	51	55	52	2.5	3.5	6.0	4255	54	5.0	2.6
ND020351-R	1.3	95	47	53	46	2.0	1.8	3.5	3385	55	5.5	2.0
Stampede	1.7	95	53	53	46	2.0	1.5	3.7	3795	53	5.0	1.8
Long's Peak	2.3	92	53	53	50	2.0	2.0	-	3451	50	6.0	2.9
PT8-15	2.3	88	50	46	42	2.0	3.3	4.0	3530	57	3.0	3.3
IP09-3	1.7	90	44	47	41	2.5	2.8	6.7	3646	56	4.5	3.3
Max	2.0	92	46	38	34	3.5	3.8	7.8	3359	53	2.5	3.6
Othello	3.3	90	47	41	36	2.5	2.8	4.0	3590	57	3.0	3.6
Coyne	2.0	95	41	42	37	3.5	3.0	3.5	3863	51	4.0	2.5
Sequoia	2.7	90	57	49	42	2.5	2.8	1.7	3398	48	4.5	2.4
Apache	1.7	92	56	52	46	2.0	3.3	3.3	3056	57	3.0	4.0
IP08-2	5.7	90	47	41	40	3.5	3.8	7.2	3780	48	3.0	3.6
Avalanche	2.0	95	55	61	42	2.0	1.5	1.7	3524	56	4.5	3.1
T-39	3.0	93	-	52	45	2.0	1.5	6.0	3874	57	3.0	3.8
Odyssey	2.0	93	50	42	47	3.0	3.5	7.2	3678	57	2.5	4.1
Rexeter	4.0	68	-	48	50	2.5	3.0	4.0	3979	56	4.0	2.8
OAC Inferno	2.0	92	47	49	47	3.0	3.3	-	4451	45	3.5	2.5
Majesty	2.7	83	38	49	46	2.5	2.5	-	3500	52	4.0	2.9
CELRK	3.3	80	33	46	33	1.0	3.0	-	3055	53	4.0	3.5
UCD 0801	2.0	88	39	52	48	3.0	3.0	-	4712	42	1.0	2.8
Bellagio	2.0	77	38	51	47	3.0	4.0	-	3340	50	4.0	3.1
Mean	2.3	89	47	49	44	2.5	2.8	4.7	3673	54	3.9	3.0
LSD (0.05)	1.2	7.5	8	4	3	0.7	0.7	1.5	489	4.2	1.2	0.6
CV (%)	30.1	5.1	11.3	4.4	6.27	15.2	22.2	18.9	8	5	14.5	17.2

Emergence whereby 1 = best and 9 = worst; lodging 1 = best and 5 or 9 = worst. Desirability where 7 is best and 1 is worst. Harvest-ability where 1 is best and 5 is worst.

Individual location reports

CA: This planting date (relatively early, and then a very cool spring and cool early summer) gave rather unusual results for Davis. NW 590 re-established its prominence among the Pintos. The OAC LRK line was quite impressive here this season. And the relatively poor yield of our Cran UCD 0801 is something of a mystery: It has consistently yielded in the high 20's with varying planting dates, and a local commercial grower produced over 30 sacks with 0801 this season, but planting a bit later. We did not see the usual amount of shattering with T-39 this season.

CO: The trial was planted June 2, and 1.32 inches of rain on June 8 left a pretty thick crust on the surface prior to emergence. Yield estimated from 2-meter row lengths due to poor stands. Plots were harvested October 24.

ID: The CDBN was planted on May 31, 2011 at the USDA-ARS farm at Kimberly under high input management without any biotic or abiotic stresses. The two central rows 15 feet long were harvested, threshed, cleaned and seed stored for 75 days at 75F to stabilize seed moisture before weighing.

MD: 2011 Protocol for Rust Evaluation under Field Conditions in Beltsville, Maryland
The rust spreaders – comprised of the four dry and snap bean cultivars (Aurora, Slenderette, Mountaineer Half Runner, and Pinto 114) were planted on 6/24/2011, about two weeks before the other bean nurseries. Spreaders were inoculated on 7/7/2011 with a mixture of five races of the rust pathogen: 38, 39, 40, 41, and 43. Bean nurseries were planted on 7/8/2011. All bean lines/cultivars were evaluated in two reps, each rep was in a single rows (2m long).

Bean Rust Scale:

1. Highly resistant: no visible rust pustules present.
3. Resistant: presence of only a few and generally small pustules on most plants that cover approximately 2% of the foliar area.
5. Intermediate: presence of generally small or intermediate pustules on all plants that cover approximately 5% of the foliar area.
7. Susceptible: presence of mostly large pustules often surrounded by chlorotic halos that cover approximately 10% of the foliar area.
9. Highly susceptible: presence of large and very large pustules, with chlorotic halos that cover more than 25% of the foliar tissue and cause premature defoliation.

MI: Plots were direct harvested.

Kidney and Cranberry UCD801 grown at Montcalm, MI was planted 6/14/11.

Pinto, navy, black and Bellagio grown at Frankenmuth, MI was planted 6/4/11.

MT: CDBN information, Sidney, Montana (Joyce Eckhoff)

CDBN site:

Altitude: 1950 ft

Latitude: 47° 40' N

Longitude: 104° 08'

Soil type: Savage silty clay

Previous crops: 2010 –sugarbeet, 2009 – small grain, 2008 – safflower

Residual soil N to 4 ft: 37 lb/ac

Residual soil P to 6 inches: 18 ppm

Applied fertilizer: 300 lb/ac 18-46-0 applied in fall, 2010

Herbicides: Sonolan at a rate of 3 pt/ac and Eptam at a rate of 3 pt/ac applied May 6 and incorporated immediately

Experimental design: Randomized complete block with three replications

Rows per plot: 3

Row length: 20 feet

Spacing between rows: 2 feet

Planted: May 26

Irrigated (sprinkler) on: July 5, July 19, August 3, August 18 and August 30

Precipitation April – August, 2011: 13.93 in

Ave (62 yr) precipitation April – August: 9.55 in

Precipitation September 2010 – August 2011: 24.15 in

Ave (62 yr) precipitation September – August: 14.06 in

Comments:

It was generally a cool and very wet summer.

Harvested: September 14, 19 and 22

Harvest method: hand pulled, dried, and threshed with a Wintersteiger plot combine

Area harvested: 32 feet²

ND: Pinto/Navy/black entries: planted at Hatton-ND on June 6th but navy trial was lost due to excessive flooding. Pintos were harvested on Sept. 27th.

Cran/kidney entries: planted at Park Rapids-MN on June 3rd and harvested on Sept. 19th. Bacterial brown spot was the main disease affecting the trials.

NE: The trial was planted on June 7 at the Scottsbluff Ag Lab. Seeding rates of 85,000 seeds per acre were used for all market classes except the kidneys which were planted at the rate of 100,000 seeds per acre.

The herbicides Sonalan and Eptam were incorporated prior to planting. Fertilizer was applied according to soil test recommendations. Row width was 22 inches. Plot size was

4 rows wide by 25 feet long. Stands were poor at all sites due to a number of wind and hail storms that occurred during the month of June. All sites were rotary hoed to aid in emergence. The trial was furrow irrigated every 7 to 9 days from mid July to late August. Yield was corrected to 14 % moisture.

NY: Planting date June 21.

ON: Plot Size: 36 cm rows, 6 m row length, 4 row plots, 4 rep RCBD

Planting Date: June 14

Harvest Area: 5.5 m x 1.5 m = 8.25 m²

WA: Planting date June 3. Three replications were planted. Each market class was grown in separate side-by-side trials. Plants were slowed initially by cool June temperatures, but below average temperatures during bloom in July reduced yield loss from heat stress. Beet curly top virus was nonexistent.

WY: The plots were planted on June 3rd in three row plots that were 5.5 feet wide by 20 feet long. IH 185 planter units with cone attachments were used, set on 22-inch row spacing. Stand establishment was reasonable, with timely planting and reasonable soil temperatures. Moderate summer temperatures and limited summer precipitation, followed by an exceptional fall allowed all entries to reach maturity. A hail event when some of the later maturing varieties were still in the field resulted in shattering loss for those lines. Yields across entries averaged 2,725 lbs. per acre, and ranged from 2,036 pounds per acre for 'T-9903' navy bean to 3,505 pounds per acre for 'ND307' pinto bean.